December 16, 2005

Peter Van Alyea
Redwood Oil Company
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Rohnert Park, CA 94928

Ground Water Monitoring Report
November, 2005
Former Redwood Oil Bulk Plant
105 X Street
Eureka, California
ECM Project #99-110-04

Dear Mr. Van Alyea:

This report provides the results of quarterly ground water monitoring at the Former Redwood Oil Bulk Plant at 105 X Street in Eureka, California (Figure 1, Appendix A). On November 16, 2005, ECM Group personnel visited the site. Ground water elevations were measured in the six monitoring wells, and ground water samples were collected from four of the six monitoring wells (MW-1, MW-3, MW-5, and MW-6) in accordance with the site monitoring program.[1] The well locations are shown on Figure 2 (Appendix A).

Ground water levels were measured in each of the six monitoring wells. Free-phase hydrocarbons were not observed in any of the wells. Wellheads and well vaults were observed to be in good condition. Water level data is shown in Table 1 (Appendix B) and a ground water elevation contour map is included as Figure 2 (Appendix A).

The samples were forwarded under chain of custody record to Entech Analytical Labs, of Santa Clara, California for analysis. Analytical results for ground water are included in Tables 2 and 3 (Appendix B). Ground water samples were collected in accordance with ECM Standard Operating Procedure - Ground Water Sampling (Appendix E). The chain of custody document and laboratory analytical reports are included as Appendix C. The water sampling data sheets are included as Appendix D. Purge water and decon rinseate were transported to an ROC holding tank for proper disposal.

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[1] Monitoring and Reporting Program No. R1-2004-0113 for Redwood Oil Company, 105 X Street, Eureka, CA, December 2, 2004.

Analytical results for this sampling event were generally consistent with results from prior sampling events. Analyses were performed in accordance with the site monitoring schedule. Samples form wells MW-1, MW-3, and MW-5 were analyzed for TPH(G), BTEX compounds, and MTBE. The sample from MW-6 was analyzed for MTBE.

The concentrations of TPH(G) and MTBE reported in the sample collected from well MW-1 were increased over the concentrations reported in the sample from the August 2005 sampling event. Concentrations of TPH(G) and MTBE were consistent with concentrations reported in previous samples from MW-1. Low concentrations of benzene and ethylbenzene were reported for the first time in samples from MW-1. Low concentrations of toluene and xylenes were also reported in the sample.

Well MW-2 is currently on a semi-annual sampling schedule and is scheduled to be sampled next in February 2006.

Low concentrations of TPH(G), BTEX, compounds, and MTBE were reported in the sample from well MW-3. Concentrations were increased from the August 2005 samples, but remained relatively low compared to previous samples from MW-3. MW-3 is located on perimeter of the September, 2004 remedial excavation, and the recent decrease in contaminant concentrations may be a result of the excavation.

Well MW-4 is located upgradient from the impacted area of the site and is sampled on an annual basis in February. MTBE has previously been detected at low concentrations in samples from MW-4.

Low concentrations of TPH(G) and very low concentrations of BTEX compounds and MTBE were detected in the sample from well MW-5. MTBE concentrations have decreased in each of the last three samples collected from MW-5 and TPH(G) concentrations have decreased in the past two samples collected from MW-5. MW-5 is located approximately 10 to 15 ft downgradient from the 2004 remedial excavation. Reduced concentrations may be a result of the excavation.

Well MW-6 is located downgradient from well MW-5. The sample from well MW-6 was analyzed for MTBE. MTBE was detected at a low concentration, consistent with results from previous samples.

Thank you for the opportunity to provide environmental services to Redwood Oil Company. Please call if you have any questions.

Sincerely,
ECM Group

David Hazard
Environmental Scientist

Chris Bramer
Professional Engineer #C048846

Appendices:
A - Figures
B - Tables
C - Chain of Custody and Laboratory Analytical Reports
D - Water Sampling Data Sheets
E - Standard Operating Procedure

cc: Kasey Ashley, North Coast Regional Water Quality Control Board
Mark Inglis, Chevron Products Co.

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APPENDIX A

FIGURES

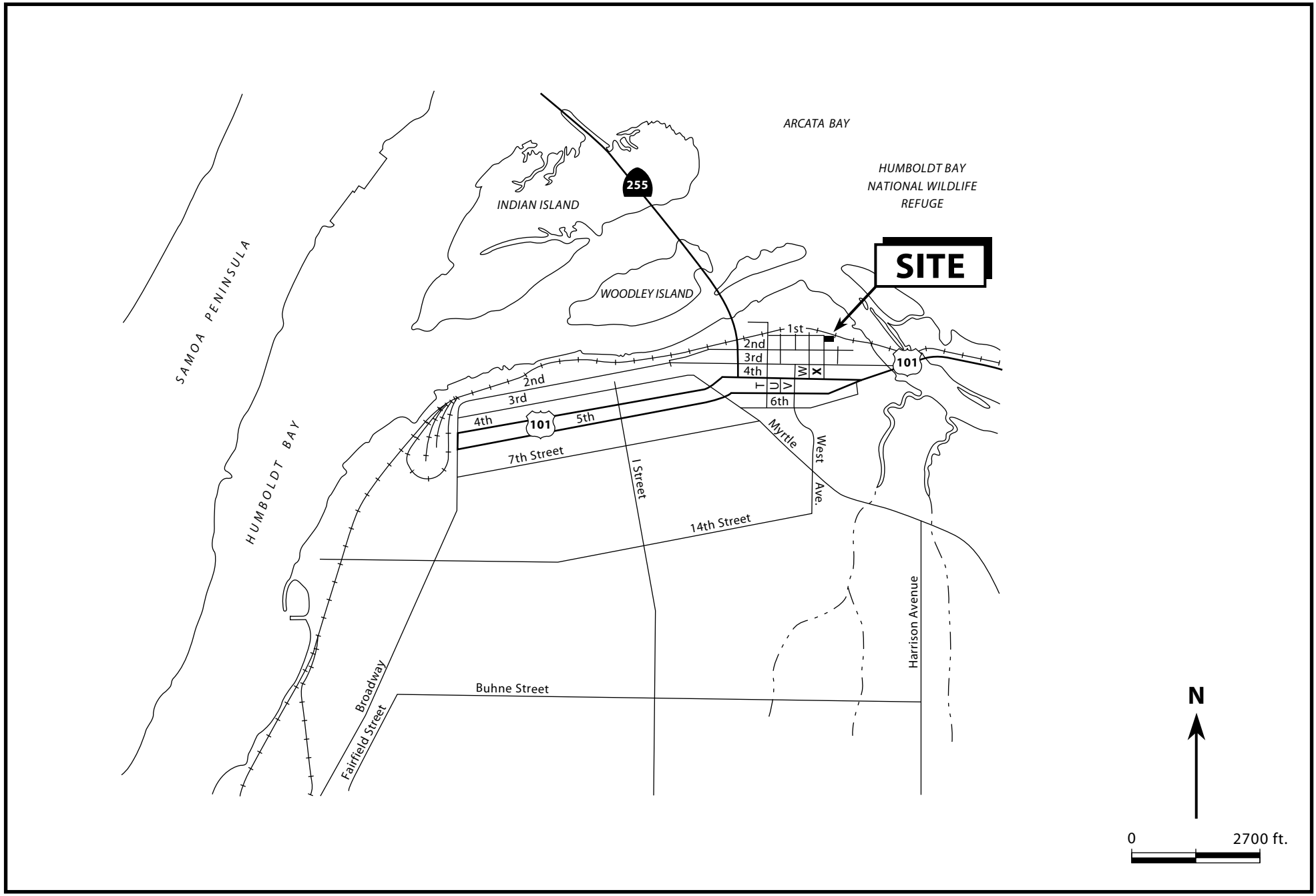
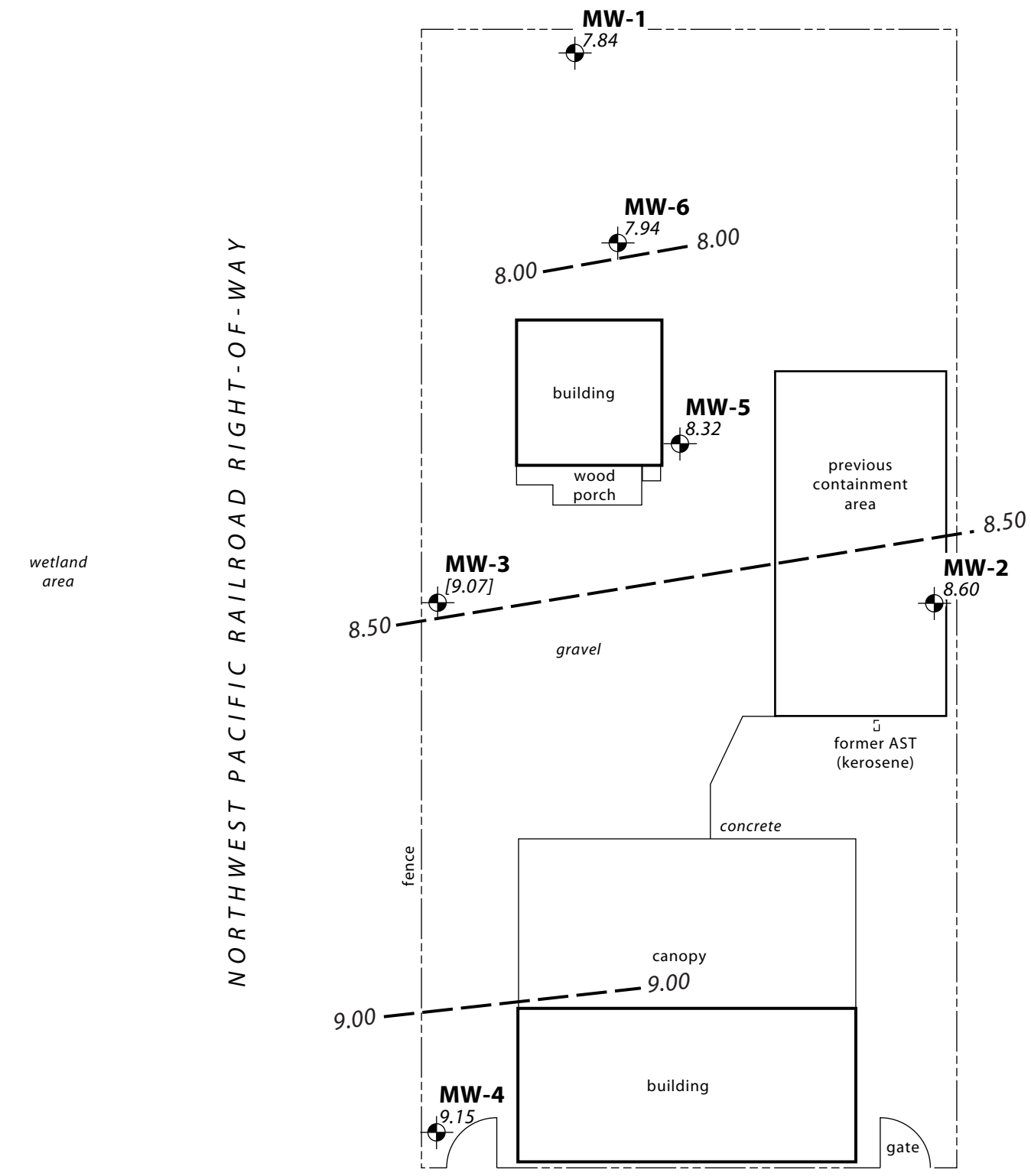


Figure 1. Site Location Map - Former Redwood Oil Bulk Plant, 105 X Street, Eureka, California

EXPLANATION

MW-6	Monitoring well
9.15	Ground water elevation, in feet above mean sea level
[9.07]	Ground water elevation, not used in contour
8.00	Ground water elevation contour, dashed where inferred

Approximate ground water flow direction with an approximate gradient of 0.007 ft/ft



N

0 30 ft.

Figure 2. Monitoring Well Location and Groundwater Elevation Contour Map - November 16, 2005 - Former Redwood Oil Bulk Plant, 105 X Street, Eureka, California

APPENDIX B

TABLES

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-1	5/14/2001	2.45	9.30	6.85	2 - 12	2 - 12	0 - 2	
	8/13/2001	2.92		6.38				
	11/9/2001	2.63		6.67				
	2/14/2002	1.84		7.46				
	5/1/2002	1.85		7.45				
	8/8/2002	2.91		6.39				
	11/15/2002	2.26		7.04				
	2/14/2003	1.78		7.52				
	5/23/2003	2.14		7.16				
	8/26/2003	2.85		6.45				
	11/17/2003	2.66		6.64				
	2/23/2004	1.38		7.92				
	5/13/2004	2.34		6.96				
	8/17/2004	2.76		6.54				
	11/23/2004	2.17		7.13				
	2/23/2005	1.68		7.62				
	8/17/2005	2.78		6.52				
	11/16/2005	**1.46**		**7.84**				
MW-2	5/14/2001	3.28	10.96	7.68	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.63		7.33				
	11/9/2001	3.41		7.55				
	2/14/2002	2.90		8.06				
	5/1/2002	2.85		8.11				
	8/8/2002	3.71		7.25				
	11/15/2002	2.92		8.04				
	2/14/2003	2.88		8.08				
	5/23/2003	3.11		7.85				
	8/26/2003	3.65		7.31				
	11/17/2003	3.40		7.56				
	2/23/2004	2.45		8.51				
	5/13/2004	3.28		7.68				
	8/17/2004	3.49		7.47				
	11/23/2004	2.99		7.97				
	2/23/2005	3.86		7.10				

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-2	8/17/2005	3.55	10.96	7.41	2 - 12	2 - 12	0 - 2	
	11/16/2005	**2.36**		**8.60**				
MW-3	5/14/2001	2.81	10.37	7.56	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.29		7.08				
	11/9/2001	2.98		7.39				
	2/14/2002	2.12		8.25				
	5/1/2002	1.99		8.38				
	8/8/2002	3.42		6.95				
	11/15/2002	2.44		7.93				
	2/14/2003	2.11		8.26				
	5/23/2003	2.38		7.99				
	8/26/2003	3.39		6.98				
	11/17/2003	2.60		7.77				
	2/23/2004	1.60		8.77				
	5/13/2004	2.72		7.65				
	8/17/2004	3.19		7.18				
	11/23/2004	2.29		8.08				
	2/23/2005	1.66		8.71				
	8/17/2005	2.96		7.41				
	11/16/2005	**1.30**		**9.07**				
MW-4	5/14/2001	3.19	11.20	8.01	2 - 12	2 - 12	0 - 2	
	8/13/2001	3.63		7.57				
	11/9/2001	3.39		7.81				
	2/14/2002	2.57		8.63				
	5/1/2002	2.42		8.78				
	8/8/2002	3.89		7.31				
	11/15/2002	3.12		8.08				
	2/14/2003	2.58		8.62				
	5/23/2003	2.88		8.32				
	8/26/2003	3.94		7.26				
	11/17/2003	3.10		8.10				
	2/23/2004	2.19		9.01				
	5/13/2004	3.14		8.06				

Table 1. Monitoring Well Survey Data, Well Construction Details and Depth to Ground Water - 105 X Street, Eureka, California.

Well ID	Sample Date	DTW (Ft)	TOC (Ft, msl)	GWE (Ft, msl)	Screen Interval	Sand Pack Interval	Bentonite/ Grout Interval	Notes
MW-4	8/17/2004	2.04	11.20	9.16	2 - 12	2 - 12	0 - 2	
	11/23/2004	2.93		8.27				
	2/23/2005	2.39		8.81				
	8/17/2005	3.70		7.50				
	11/16/2005	**2.05**		**9.15**				
MW-5	2/14/2003	2.39	10.26	7.87	2 - 12	2 - 12	0 - 2	
	5/23/2003	2.66		7.60				
	8/26/2003	3.36		6.90				
	11/17/2003	3.09		7.17				
	2/23/2004	1.90		8.36				
	5/13/2004	2.93		7.33				
	8/17/2004	3.25		7.01				
	11/23/2004	2.64		7.62				
	2/23/2005	2.19		8.07				
	8/17/2005	3.33		6.93				
	11/16/2005	**1.94**		**8.32**				
MW-6	2/14/2003	2.03	9.69	7.66	2 - 12	2 - 12	0 - 2	
	5/23/2003	2.33		7.36				
	8/26/2003	3.03		6.66				
	11/17/2003	2.81		6.88				
	2/23/2004	1.56		8.13				
	5/13/2004	2.56		7.13				
	8/17/2004	2.96		6.73				
	11/23/2004	2.37		7.32				
	2/23/2005	2.17		7.52				
	8/17/2005	2.86		6.83				
	11/16/2005	**1.75**		**7.94**				

Explanation:

DTW = Depth to Water msl = Mean Sea Level
ft = feet
TOC = Top of Casing
GWE = Ground Water Elevation

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-1	5/14/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	<50	<0.5	<0.5	<0.5	0.51	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	130	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	230	---	---	---	---	Sample flagged by lab. See lab report for details.
	4/21/2005	---	---	130	<1	1.7	<1	2.0	
	8/17/2005	**---**	**---**	<50	<0.50	0.67	<0.50	1.0	
	11/16/2005	**---**	**---**	**86**	**6.7**	**4.9**	**1.3**	**6.6**	
MW-2	5/14/2001	190	<170	660	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	140	<170	890	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	300	<0.5	<0.5	<0.5	0.5	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	180	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	190	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	290	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	140	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	0.5	
	8/17/2004	51	<170	240	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	<50	---	---	---	---	
	8/17/2005	**---**	**---**	83	<0.50	0.51	<0.50	0.99	

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-3	5/14/2001	930	<170	2,900	28	45	140	69	
	8/13/2001	730	<170	3,600	31	49	140	99	
	11/9/2001	220	<170	2,700	26	39	120	78	
	2/14/2002	660	<170	3,400	20	59	120	82	
	5/1/2002	520	<170	3,600	15	52	150	107	
	8/8/2002	240	<170	1,200	13	17	53	29.7	
	11/15/2002	310	<170	1,900	13	20	64	44.9	
	2/14/2003	730	<170	5,400	31	88	210	112	
	8/26/2003	200	<170	2,000	17	21	67	38.3	
	2/23/2004	360	<170	3,100	21	39	110	62.9	
	8/17/2004	110	<170	1,500	14	11	42	25.9	
	2/23/2005	---	---	1,600	2.8	8.6	69	28	
	8/17/2005	**---**	**---**	350	<0.50	1.0	1.9	3.2	
	11/16/2005	**---**	**---**	**800**	**4.1**	**6.0**	**17**	**20**	
MW-4	5/14/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	8/13/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	11/9/2001	<50	<170	<50	<0.5	<0.5	<0.5	<0.5	
	2/14/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/1/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/8/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/15/2002	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2005	---	---	---	---	---	---	---	MW-4 analyzed for MTBE only, as of 12/2/04.

Table 2. Analytical Results for Ground Water - Monitoring Wells - 105 X Street, Eureka, California.

Sample ID	Date Sampled	TPPH (D)	TPPH(MO)	TPPH (G)	Benzene	Toluene	Ethylbenzene	Xylenes	Notes
		<---------- ppb ---------->							
MW-5	2/14/2003	89	<170	190	<0.50	<0.50	<0.50	<0.50	
	5/23/2003	110	<170	300	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	170	<0.50	<0.50	<0.50	<0.50	
	11/17/2003	51	<170	230	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	94	<170	260	<0.50	<0.50	<0.50	<0.50	
	5/13/2004	62	<170	170	<0.50	<0.50	<0.05	<0.50	
	8/17/2004	62	<170	190	<0.50	<0.50	<0.50	<0.50	
	11/23/2004	460	---	200	<0.5	<0.5	<0.5	<1	
	2/23/2005	---	---	320	---	---	---	---	Sample was flagged. See lab report for details.
	8/17/2005	**---**	**---**	120	<0.50	<0.50	<0.50	0.93	
	11/16/2005	**---**	**---**	**65**	**2.8**	**3.1**	**1.2**	**5.3**	
MW-6	2/14/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/23/2003	<50	<170	58	<0.50	<0.50	<0.50	<0.50	
	8/26/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/17/2003	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	2/23/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	5/13/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	8/17/2004	<50	<170	<50	<0.50	<0.50	<0.50	<0.50	
	11/23/2004	<50	---	25	<0.5	<0.5	<0.5	<1	
	2/23/2005	---	---	---	---	---	---	---	MW-6 analyzed for MTBE only, as of 12/2/04.

Explanation:

TPH(D) = Total Petroleum Hydrocarbons as Diesel
TPH(MO) = Total Petroleum Hydrocarbons as Motor Oil
TPH(G) = Total Petroleum Hydrocarbons as Gasoline
ppb = parts per billion

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-1	5/14/2001	<10.0	3.9	<1.0	<1.0	<1.0	
	8/13/2001	<20	11	<1.0	<1.0	<1.0	
	11/9/2001	<20	14	<1.0	<1.0	<1.0	
	2/14/2002	<20	3.3	<1.0	<1.0	<1.0	
	5/1/2002	<20	3	<1.0	<1.0	<1.0	
	8/8/2002	<20	14	<1.0	<1.0	<1.0	
	11/15/2002	<20	3.8	<1.0	<1.0	<1.0	
	2/14/2003	<20	48	<1.0	<1.0	8.4	
	8/26/2003	<20	12	<1.0	<1.0	<1.0	
	2/23/2004	<10	76	<1.0	<1.0	42	
	8/17/2004	<10	8.1	<1.0	<1.0	<1.0	
	2/23/2005	---	220	---	---	---	
	4/21/2005	---	110	---	---	---	
	8/17/2005	---	8.1	---	---	---	
	11/16/2005	---	**95**	---	---	---	
MW-2	5/14/2001	16	73	<1.0	<1.0	<1.0	
	8/13/2001	<20	130	<1.0	<1.0	1.2	
	11/9/2001	<20	98	<1.0	<1.0	<1.0	
	2/14/2002	<20	12	<1.0	<1.0	<1.0	
	5/1/2002	22	120	<1.0	<1.0	<1.0	
	8/8/2002	<20	53	<1.0	<1.0	<1.0	
	11/15/2002	<20	29	<1.0	<1.0	<1.0	
	2/14/2003	<20	36	<1.0	<1.0	<1.0	
	8/26/2003	<20	21	<1.0	<1.0	<1.0	
	2/23/2004	<10	<1.0	<1.0	<1.0	<1.0	
	8/17/2004	<10	9.2	<1.0	<1.0	<1.0	
	2/23/2005	---	16	---	---	---	
	8/17/2005	---	19	---	---	---	

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-3	5/14/2001	<50	8.1	<2.5	<2.5	<2.5	
	8/13/2001	<20	<20	<1.0	<1.0	<1.0	
	11/9/2001	<20	<20	<1.0	<1.0	<1.0	
	2/14/2002	<20	4.9	<1.0	<1.0	<1.0	
	5/1/2002	<20	4.4	<1.0	<1.0	<1.0	
	8/8/2002	<20	6.3	<10	<1.0	1.4	
	11/15/2002	<20	6.1	<1.0	<1.0	<3.0	
	2/14/2003	<20	<12	<1.0	<1.0	<1.0	
	8/26/2003	<20	<10	<1.0	<1.0	1.2	
	2/23/2004	<10	<6.0	<1.0	<1.0	<1.0	
	8/17/2004	<10	<8.0	<1.0	<1.0	<1.0	
	2/23/2005	---	6.0	---	---	---	
	8/17/2005	---	3.1	---	---	---	
	11/16/2005	---	**7.9**	---	---	---	
MW-4	5/14/2001	<10.0	<0.50	<1.0	<1.0	<1.0	
	8/13/2001	<20	<1.0	<1.0	<1.0	<1.0	
	11/9/2001	<20	<1.0	<1.0	<1.0	<1.0	
	2/14/2002	<20	<1.0	<1.0	<1.0	<1.0	
	5/1/2002	<20	<1.0	<1.0	<1.0	<1.0	
	8/8/2002	<20	5.9	<1.0	<1.0	<1.0	
	11/15/2002	<20	4.7	<1.0	<1.0	<1.0	
	2/14/2003	<20	8.8	<1.0	<1.0	<1.0	
	8/26/2003	<20	6.9	<1.0	<1.0	<1.0	
	2/23/2004	<10	6.7	<1.0	<1.0	<1.0	
	8/17/2004	<10	4	<1.0	<1.0	<1.0	
	2/23/2005	---	3.1	---	---	---	

Table 3. Analytical Results for Ground Water - Oxygenates - 105 X Street, Eureka, California.

Sample ID	Sample Date	t-Butyl alcohol (TBA)	MTBE	Diisopropyl ether (DIPE)	Ethyl t-butyl ether (ETBE)	t-Amyl methyl ether (TAME)	Notes
MW-5	2/14/2003	<20	32	<1.0	<1.0	<1.0	
	5/23/2003	<20	52	<1.0	<1.0	1	
	8/26/2003	<20	43	<1.0	<1.0	<1.0	
	11/17/2003	<20	57	<1.0	<1.0	1.6	
	2/23/2004	<10	20	<1.0	<1.0	<1.0	
	5/13/2004	<10	22	<1.0	<1.0	<1.0	
	8/17/2004	<10	55	<1.0	<1.0	2.6	
	11/23/2004	<10	33	<5	<5	<5	
	2/23/2005	---	8.8	---	---	---	
	8/17/2005	---	3.1	---	---	---	
	11/16/2005	---	**2.2**	---	---	---	
MW-6	2/14/2003	<20	10	<1.0	<1.0	<1.0	
	5/23/2003	<20	41	<1.0	<1.0	1.7	
	8/26/2003	<20	25	<1.0	<1.0	<1.0	
	11/17/2003	<20	25	<1.0	<1.0	<1.0	
	2/23/2004	<10	5.3	<1.0	<1.0	<1.0	
	5/13/2004	<10	15	<1.0	<1.0	<1.0	
	8/17/2004	<10	25	<1.0	<1.0	<1.0	
	11/23/2004	<10	19	<5	<5	<5	
	2/23/2005	---	9.8	---	---	---	
	8/17/2005	---	11	---	---	---	
	11/16/2005	---	**9.2**	---	---	---	

Explanation:

MTBE = Methyl Tertiary-butyl Ether

APPENDIX C

CHAIN OF CUSTODY
AND
LABORATORY ANALYTICAL REPORTS

Entech Analytical Labs, Inc.

3334 Victor Court • Santa Clara, CA 95054 • (408) 588-0200 • Fax (408) 588-0201

Dave Hazard
ECM Group
290 W. Channel Rd.
Benicia, CA 94510

Lab Certificate Number: 46396
Issued: 12/01/2005

Project Location: Eureka

Project Number: 99-110-04
Project Name: 105 X ST.

Global ID: T0602393494

Certificate of Analysis - Final Report

On November 21, 2005, samples were received under chain of custody for analysis.
Entech analyzes samples "as received" unless otherwise noted. The following results are included:

Matrix	Test	Comments
Liquid	Electronic Deliverables	
	EPA 8260B - GC/MS	
	TPH as Gasoline by GC/MS	

Entech Analytical Labs, Inc. is certified for environmental analyses by the State of California (#2346).
If you have any questions regarding this report, please call us at 408-588-0200 ext. 225.

Sincerely,

Erin Cunniffe
Laboratory Operations Manager

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Date Received: 11/21/2005 1:44:44 PM

Project Number: 99-110-04
Project Name: 105 X ST.
GlobalID: T0602393494

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46396-001 **Sample ID: MW-1** **Matrix:** Liquid **Sample Date:** 11/16/2005 1:00 PM

EPA 5030C EPA 8260B EPA 624 — **8260Petroleum**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	6.7		1.0	0.50	µg/L	N/A	N/A	11/23/2005	WM1051123
Toluene	4.9		1.0	0.50	µg/L	N/A	N/A	11/23/2005	WM1051123
Ethyl Benzene	1.3		1.0	0.50	µg/L	N/A	N/A	11/23/2005	WM1051123
Xylenes, Total	6.6		1.0	0.50	µg/L	N/A	N/A	11/23/2005	WM1051123
Methyl-t-butyl Ether	95		1.0	1.0	µg/L	N/A	N/A	11/23/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	94.2	70 - 130
Dibromofluoromethane	114	70 - 130
Toluene-d8	105	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

EPA 5030C GC-MS — **TPH as Gasoline - GC-MS**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	86		1.0	50	µg/L	N/A	N/A	11/23/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	91.2	70 - 130
Dibromofluoromethane	94.8	70 - 130
Toluene-d8	94.8	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Lab # : 46396-002 **Sample ID: MW-3** **Matrix:** Liquid **Sample Date:** 11/16/2005 1:30 PM

EPA 5030C EPA 8260B EPA 624 — **8260Petroleum**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	4.1		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Toluene	6.0		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Ethyl Benzene	17		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Xylenes, Total	20		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Methyl-t-butyl Ether	7.9		1.0	1.0	µg/L	N/A	N/A	11/24/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	98.8	70 - 130
Dibromofluoromethane	112	70 - 130
Toluene-d8	110	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

EPA 5030C GC-MS — **TPH as Gasoline - GC-MS**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	800		5.0	250	µg/L	N/A	N/A	11/29/2005	WM1051129

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	92.5	70 - 130
Dibromofluoromethane	91.9	70 - 130
Toluene-d8	94.5	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

ECM Group
290 W. Channel Rd.
Benicia, CA 94510
Attn: Dave Hazard

Date Received: 11/21/2005 1:44:44 PM

Project Number: 99-110-04
Project Name: 105 X ST.
GlobalID: T0602393494

Certificate of Analysis - Data Report

Sample Collected by: Client

Lab # : 46396-003 **Sample ID: MW-5** **Matrix:** Liquid **Sample Date:** 11/16/2005 1:45 PM

EPA 5030C EPA 8260B EPA 624 — **8260Petroleum**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Benzene	2.8		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Toluene	3.1		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Ethyl Benzene	1.2		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Xylenes, Total	5.3		1.0	0.50	µg/L	N/A	N/A	11/24/2005	WM1051123
Methyl-t-butyl Ether	2.2		1.0	1.0	µg/L	N/A	N/A	11/24/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	96.8	70 - 130
Dibromofluoromethane	107	70 - 130
Toluene-d8	104	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

EPA 5030C GC-MS — **TPH as Gasoline - GC-MS**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
TPH as Gasoline	65		1.0	50	µg/L	N/A	N/A	11/24/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	93.8	70 - 130
Dibromofluoromethane	89.3	70 - 130
Toluene-d8	94.3	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Lab # : 46396-004 **Sample ID: MW-6** **Matrix:** Liquid **Sample Date:** 11/16/2005 1:15 PM

EPA 5030C EPA 8260B EPA 624 — **8260Petroleum**

Parameter	Result	Qual	D/P-F	Detection Limit	Units	Prep Date	Prep Batch	Analysis Date	QC Batch
Methyl-t-butyl Ether	9.2		1.0	1.0	µg/L	N/A	N/A	11/24/2005	WM1051123

Surrogate	Surrogate Recovery	Control Limits (%)
4-Bromofluorobenzene	95.8	70 - 130
Dibromofluoromethane	108	70 - 130
Toluene-d8	105	70 - 130

Analyzed by: XBian
Reviewed by: MaiChiTu

Detection Limit = Detection Limit for Reporting.
D/P-F = Dilution and/or Prep Factor includes sample volume adjustments.
ND = Not Detected at or above the Detection Limit.
Qual = Data Qualifier

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051123

Validated by: MaiChiTu - 11/30/05

QC Batch Analysis Date: 11/23/2005

Parameter	Result	DF	PQLR	Units
Benzene	ND	1	0.50	µg/L
Ethyl Benzene	ND	1	0.50	µg/L
Methyl-t-butyl Ether	ND	1	1.0	µg/L
Toluene	ND	1	0.50	µg/L
Xylenes, Total	ND	1	0.50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**95.2**	70 - 130
Dibromofluoromethane	**109**	70 - 130
Toluene-d8	**106**	70 - 130

Laboratory Control Sample / Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051123

Reviewed by: MaiChiTu - 11/30/05

QC Batch ID Analysis Date: 11/23/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
Benzene	<0.50	20	21.7	µg/L	108	70 - 130
Methyl-t-butyl Ether	<1.0	20	20.2	µg/L	101	70 - 130
Toluene	<0.50	20	22.4	µg/L	112	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**94.6**	70 - 130
Dibromofluoromethane	**109**	70 - 130
Toluene-d8	**103**	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	<0.50	20	23.7	µg/L	118	**8.8**	25.0	70 - 130
Methyl-t-butyl Ether	<1.0	20	23.7	µg/L	118	**16**	25.0	70 - 130
Toluene	<0.50	20	24.2	µg/L	121	**7.7**	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**95.5**	70 - 130
Dibromofluoromethane	**112**	70 - 130
Toluene-d8	**102**	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Matrix Spike / Matrix Spike Duplicate - Liquid - EPA 8260B - 8260Petroleum

QC Batch ID: WM1051123

Reviewed by: MaiChiTu - 11/30/05

QC Batch ID Analysis Date: 11/23/2005

MS Sample Spiked: 46418-002

Parameter	Sample Result	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	Recovery Limits
Benzene	ND	20	20.6	µg/L	11/23/2005	103	70 - 130
Methyl-t-butyl Ether	ND	20	19.8	µg/L	11/23/2005	99.0	70 - 130
Toluene	ND	20	21.4	µg/L	11/23/2005	107	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**94.5**	70 - 130
Dibromofluoromethane	**110**	70 - 130
Toluene-d8	**104**	70 - 130

MSD Sample Spiked: 46418-002

Parameter	Sample Result	Spike Amount	Spike Result	Units	Analysis Date	% Recovery	RPD	RPD Limits	Recovery Limits
Benzene	ND	20	20.4	µg/L	11/23/2005	102	0.98	25.0	70 - 130
Methyl-t-butyl Ether	ND	20	20.2	µg/L	11/23/2005	101	2.0	25.0	70 - 130
Toluene	ND	20	21.1	µg/L	11/23/2005	106	1.4	25.0	70 - 130

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**92.6**	70 - 130
Dibromofluoromethane	**111**	70 - 130
Toluene-d8	**101**	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051123

Validated by: MaiChiTu - 11/30/05

QC Batch Analysis Date: 11/23/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**92.2**	70 - 130
Dibromofluoromethane	**90.8**	70 - 130
Toluene-d8	**96.4**	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051123

Reviewed by: MaiChiTu - 11/30/05

QC Batch ID Analysis Date: 11/23/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	157	µg/L	125	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**94.3**	70 - 130
Dibromofluoromethane	**92.6**	70 - 130
Toluene-d8	**96.1**	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	135	µg/L	108	**15**	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**92.4**	70 - 130
Dibromofluoromethane	**90.2**	70 - 130
Toluene-d8	**97.1**	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court , Santa Clara, CA 95054 Phone: (408) 588-0200 Fax: (408) 588-0201

Method Blank - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051129

Validated by: MaiChiTu - 11/30/05

QC Batch Analysis Date: 11/29/2005

Parameter	Result	DF	PQLR	Units
TPH as Gasoline	ND	1	50	µg/L

Surrogate for Blank	% Recovery	Control Limits
4-Bromofluorobenzene	**90.5**	70 - 130
Dibromofluoromethane	**90.8**	70 - 130
Toluene-d8	**94.0**	70 - 130

Laboratory Control Sample / Duplicate - Liquid - GC-MS - TPH as Gasoline - GC-MS

QC Batch ID: WM1051129

Reviewed by: MaiChiTu - 11/30/05

QC Batch ID Analysis Date: 11/29/2005

LCS

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	Recovery Limits
TPH as Gasoline	<25	120	135	µg/L	108	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**92.5**	70 - 130
Dibromofluoromethane	**87.1**	70 - 130
Toluene-d8	**95.9**	70 - 130

LCSD

Parameter	Method Blank	Spike Amt	SpikeResult	Units	% Recovery	RPD	RPD Limits	Recovery Limits
TPH as Gasoline	<25	120	128	µg/L	103	**5.1**	25.0	65 - 135

Surrogate	% Recovery	Control Limits
4-Bromofluorobenzene	**93**	70 - 130
Dibromofluoromethane	**88.8**	70 - 130
Toluene-d8	**94.7**	70 - 130

Entech Analytical Labs, Inc.

3334 Victor Court (408) 588-0200
Santa Clara, CA 95054 (408) 588-0201 - Fax

Chain of Custody / Analysis Request

Attention to: D. Hazard	Phone No.: 707 751-0655	Purchase Order No.:	Invoice to: (If Different)	Phone:
Company Name: ECM Group	Fax No.: 707 751-0653	Project No.: 99 110 04	Company: Redwood Oil Company	Quote No.:
Mailing Address: PO Box 802	Email Address: ecmgrp@aol.com	Project Name: Eureka	Billing Address: (If Different)	
City: Benicia	State: CA Zip Code: 94510	Project Location:	City: State: Zip:	

Sampler: MIKE JACKSON Field Org. Code:

Global ID:

Turn Around Time
❑ Same Day ❑ 1 Day
❑ 2 Day ❑ 3 Day
❑ 4 Day ☒ 10 Day ❑ 5 Day

Order ID: 46396

Client ID / Field Point	Lab. No.	Sample Date	Sample Time	Matrix	No. of Containers	GC/MS Methods: EPA 8260B	GC/MS Methods: BTEX X MTBE X TPH Gas X by 8260B	GC/MS Methods: 5 Oxygenates (MTBE, TBA, ETBA, DIPE, TAME) ❑ Ethanol ❑	GC/MS Methods: Lead Scavengers (1,2-DCA & EDB) ❑	GC/MS Methods: Base/Neutral/Acid Organics 8270C ❑ PAH - 8270C ❑ PAH - 8270C SIM ❑	GC Methods: TPH Extractable, Diesel ❑ Motor Oil ❑ Other ❑	GC Methods: Pesticides-8081 ❑ PCBs - 8082 ❑	GC Methods: TPH as Gas/BTEX ❑ MTBE ❑ by 8015M/8020	GC Methods: Methanol by 8015M	General Chemistry: Anions: F ❑ Cl ❑ Br ❑ SO4 ❑ NO3 ❑ NO2 ❑ PO4 ❑	General Chemistry: pH ❑ TSS ❑ SC ❑ TOC ❑ TRPH ❑ O & G ❑	General Chemistry: Metals - Circle Below Total ❑ Dissolved ❑ STLC ❑ TCLP ❑	Remarks
MW-1	46396-001	11/16/05	13:00	W	4		X											
~~MW-2~~ PH PM							~~X~~											
MW-3	002		13:30	W	4		X											
MW-5	003		13:45	W	4		X											
MW-6	004		13:15	W	4					X								

MTBE by 8260B

Relinquished by:	Received by:	Date:	Time:
		11/21/05	1042
Relinquished by:	Received by:	Date:	Time:
		11/21/05	1305
Relinquished by:	Received by:	Date:	Time:

Special Instructions or Comments

❑ EDD Report
☒ EDF Report
❑ Plating
❑ LUFT-5
❑ RCRA-8
❑ PPM-13
❑ CAM-17

Metals:
Al, As, Sb, Ba, Be, Bi, B, Cd, Ce, Ca, Cr, Co, Cs, Cu, Fe, Pb, Mg, Mn,
Ga, Ge, Hg, In, Li, Mo, Ni, P, K, Si, Ag, Na, S, Se, Sr, Ta, Te, Tl, Sn, Ti, Zn, V, W, Zr

APPENDIX D

WATER SAMPLING DATA SHEETS

FIELD REPORT

Project Number 99-110-04 Project Name 99-110-04 ☐ (ESOW)

Date 11/16/05

Name M. JACKSON

Project Manager _____

****

Activity Description

O.T.W.

MW-4 - 2.05

MW-2 - 2.36

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-04

Well Number MW-1 Date 11/16/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 10.72

Depth to Water (static) 1.46 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 9.26 Volume 1.50 gallons

Total to be evacuated = 3 x Initial Volume 4.52 gallons

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Formulae/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_4" casing = 0.367 gal/ft
V_5" casing = 0.653 gal/ft
$V_{5.6}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	67.5	64.8	63.8				
pH	6.78	6.63	6.36				
EC (umhos/cm)	785	671	617				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13:00

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-04

Well Number MW-3 Date 11/16/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 10.80

Depth to Water (static) 1.30 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 9.50 Volume 1.54 gallons

Total to be evacuated = 3 x Initial Volume 4.64 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_5" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	64.1	62.6	62.2				
pH	6.40	6.33	6.36				
EC (umhos/cm)	339	332	340				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13:30

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-04

Well Number MW-5 Date 11/16/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 11.90

Depth to Water (static) 1.94 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 9.96 Volume 1.62 gallons

Total to be evacuated = 3 x Initial Volume 4.87 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.826 gal/ft
V_6" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ___ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	64.2	62.9	62.8				
pH	6.27	6.19	6.17				
EC (umhos/cm)	261	250	242				
Special Conditions							

SAMPLES COLLECTED

Sample ID ml	Bottle/ cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13:45

WATER SAMPLING DATA

Job Name EUREKA Job Number 99-110-04

Well Number MW-6 Date 11/16/05 Time

Well Diameter 2" Well Depth (spec.) Well Depth (sounded) 11.75

Depth to Water (static) 1.75 TOC elev.

G.W. Elev. Maximum Drawdown Limit (if applicable)

Initial height of water in casing 10.00 Volume 1.63 gallons

Total to be evacuated = 3 x Initial Volume 4.89 gallons

Formulas/Conversions
r = well radius in ft
h = ht of water col. in ft
vol. in cyl. = $\pi r^2 h$
7.48 gal/ft³
V_2" casing = 0.163 gal/ft
V_3" casing = 0.367 gal/ft
V_4" casing = 0.653 gal/ft
$V_{4.5}$" casing = 0.820 gal/ft
V_6" casing = 1.47 gal/ft

Stop Time	Start Time	Bailed	Pumped	Cum. Gal.

Pumped or Bailed Dry? ___Yes X No After ____ gallons Recovery Rate

Water color Odor

Description of sediments or material in sample:

Additional Comments:

CHEMICAL DATA

Reading No.	1	2	3	4	5	6	7
Time							
Gallons							
Temp. (degree F)	63.6	62.5	62.3				
pH	6.35	6.32	6.21				
EC (umhos/cm)	304	285	283				
Special Conditions							

SAMPLES COLLECTED

Sample ID	Bottle/ ml	cap	Filtered (size, u)	Preservative (type)	Refrig. (R, NR)	Lab (Init)	Analysis Requested

Bottles: P = Polyethylene; Pp = Polypropylene; C or B = Clear/Brown Glass; O = Other (describe)
Cap Codes: Py = Polyseal; V = VOA/Teflon septa; M = Metal

13:15

APPENDIX E

ECM STANDARD OPERATING PROCEDURE

ECM STANDARD OPERATING PROCEDURE

GROUND WATER SAMPLING

The following describes sampling procedures used by ECM field personnel to collect and handle ground water samples. Before samples are collected, careful consideration is given to the type of analysis to be performed so that precautions are taken to prevent loss of volatile components or contamination of the sample, and to preserve the sample for subsequent analysis. Wells will be sampled no less than 24 hours after well development. Collection methods specific to ground water sampling are presented below.

Prior to sampling, each well is purged of a minimum of three well casing volumes of water using a steam-cleaned PVC bailer, or a pre-cleaned pump. Temperature, pH and electrical conductivity are measured at least three times during purging. Purging is continued until these parameters have stabilized (i.e., changes in temperature, pH or conductivity do not exceed 10%).

Ground water samples are collected from the wells/borings with steam-cleaned or disposable Teflon bailers. The water samples are decanted into the appropriate container for the analysis to be performed. Pre-preserved sample containers may be used or the analytic laboratory may add preservative to the sample upon arrival. Duplicate samples are collected from each well as a back-up sample and/or to provide quality control. The samples are labeled to include the project number, sample ID, date, preservative, and the field person's initials. The samples are placed in polyethylene bags and in an ice chest (maintained at 4˚C with blue ice or ice) for transport under chain-of-custody to the laboratory.

The chain-of-custody form includes the project number, analysis requested, sample ID, date analysis and the ECM field person's name. The form is signed and dated (with the transfer time) by each person who yields or receives the samples beginning with the field personnel and ending with the laboratory personnel.